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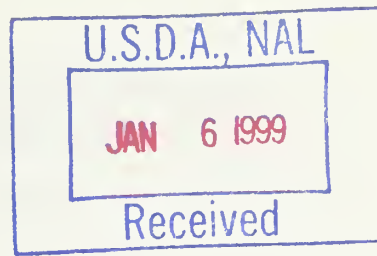
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UNITED STATES STANDARDS

for grades of

FROZEN SWEETPOTATOES

First Issue

EFFECTIVE SEPTEMBER 4, 1962

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
FRUIT AND VEGETABLE DIVISION
PROCESSED PRODUCTS STANDARDIZATION AND INSPECTION BRANCH

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This is the first issue of the United States Standards for Grades of Frozen Sweetpotatoes. These standards are issued by the Department after careful consideration of all data and views submitted. They were published in the Federal Register of August 2, 1962 (27 F.R. 7624), to become effective on September 4, 1962.

These standards are included in the Code of Federal Regulations, Title 7 -- Agriculture, Part 52.

Issued under the authority of the Agricultural Marketing Act of 1946, which provides for the development of official U.S. grades to designate different levels of quality, the grade standards are for the voluntary use of producers, suppliers, buyers, and consumers. As in the case of other standards for grades of processed fruits and vegetables, these standards are designed to facilitate orderly marketing by providing a convenient basis for buying and selling, for establishing quality control programs, and for determining loan values.

These standards will also serve as a basis for the inspection and grading of this commodity by the Federal inspection service, which is also provided under the Agricultural Marketing Act of 1946. This service, available for inspection and grading of other processed products as well, is offered to interested parties, upon application, on a fee-for-service basis.

These standards are issued by the Department after careful consideration of all data and views submitted, and the Department welcomes suggestions which might aid in improving the standards in future revisions. Comments may be submitted to, and copies of standards obtained from:

Chief, Processed Products Standardization
and Inspection Branch
Fruit and Vegetable Division, AMS
U.S. Department of Agriculture
Washington, D.C. 20250

UNITED STATES STANDARDS FOR GRADES OF FROZEN SWEETPOTATOES ¹

Effective September 4, 1962

PRODUCT DESCRIPTION, COLOR, STYLES, GRADES

Sec.

- 52.5001 Product description.
- 52.5002 Colors of frozen sweetpotatoes.
- 52.5003 Styles of frozen sweetpotatoes.
- 52.5004 Grades of frozen sweetpotatoes.

FACTORS OF QUALITY

- 52.5005 Ascertaining the grade.
- 52.5006 Color.
- 52.5007 Uniformity of size.
- 52.5008 Defects.
- 52.5009 Character.

EXPLANATION AND METHOD OF ANALYSIS

- 52.5010 Preparation by heating.

LOT INSPECTION AND CERTIFICATION

- 52.5011 Ascertaining the grade of a lot.

SCORE SHEET

- 52.5012 Score sheet for frozen sweetpotatoes.

AUTHORITY: §§ 52.5001 to 52.5012 issued under sec. 202-208, 60 Stat. 1087, as amended; 7 U.S.C. 1621-1627.

PRODUCT DESCRIPTION, COLOR, STYLES, GRADES

§ 52.5001 Product description.

Frozen sweetpotatoes is the product prepared from the clean, sound root of sweetpotatoes (*Ipomoea batatas*) by washing, sorting, trimming, draining, and peeling, as the case may be. The product may or may not be cooked; may be prepared with the addition of suitable seasoning ingredient(s), sweetening ingredient(s), antioxidant(s), edible oil(s), spices, or other suitable additives permissible under the Federal Food, Drug, and Cosmetic Act. Such ingredients may or may not be admixed with the sweetpotatoes or they may be contained separately

from the sweetpotato ingredient. When the sweetpotatoes have been cooked or partially cooked prior to freezing and are packed with a high density sirup and/or sugar to produce a "candied" effect, the frozen sweetpotatoes may be considered "Candied Sweetpotatoes" for the purposes of this subpart. In lieu of peeling, the product may be prepared as unpeeled sweetpotatoes in baked or stuffed form, with or without the addition of edible fat or oil to the peel. "Stuffed" form consists of cooked potatoes where the flesh has been removed from the peel, has been comminuted or crushed, and has been replaced in the peel or a preformed shell. The product is frozen in accordance with good commercial practice and maintained at temperatures necessary for the preservation of the product.

§ 52.5002 Colors of frozen sweetpotatoes.

- (a) Golden.
- (b) Yellow.
- (c) Mixed (golden and yellow).

§ 52.5003 Styles of frozen sweetpotatoes.

- (a) *Whole*. (1) Peeled.
- (2) Baked (unpeeled).
- (3) Stuffed (in peel or preformed shell).
- (b) *Halved (or halves)*. (1) Peeled.
- (2) Stuffed (in peel or preformed shell).
- (c) *Sliced*. This style consists of peeled units, cut longitudinally and/or crosswise, with flat-parallel or corrugated-parallel surfaces.
- (d) *French-cut*. This style consists of peeled units cut into strips, commonly called French-style cut, which may have flat or corrugated surfaces.
- (e) *Diced*. This style consists of peeled units cut into recognizable cube-shape units.

¹ Compliance with the provisions of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug, and Cosmetic Act or with applicable state laws and regulations.

(f) *Cut (or chunks)*. This style consists of peeled units of irregular sizes and shapes which do not conform to any of the foregoing single styles.

(g) *Mashed (or Souffle)*. This style consists of peeled, cooked, and wholly comminuted or crushed sweetpotatoes, which may be molded or formed into pre-determined size and shape.

(h) *Mixed (or combination)*. This style consists of peeled units which are a combination of two or more of the foregoing styles.

§ 52.5004 Grades of frozen sweetpotatoes.

(a) "U.S. Grade A" (or "U.S. Fancy") is the quality of frozen sweetpotatoes that (1) possess similar varietal characteristics, (2) have a normal flavor and odor, (3) have a good or reasonably good color, (4) are practically uniform, or reasonably uniform, in size for the applicable style, (5) are practically free from defects, (6) possess a good character, and (7) score not less than 90 points when scored in accordance with the scoring system outlined in this subpart.

(b) "U.S. Grade B" (or "U.S. Extra Standard") is the quality of frozen sweetpotatoes that (1) may possess similar or mixed varietal color characteristics, (2) have a normal flavor and odor, (3) have a reasonably good color, (4) are reasonably uniform in size for the applicable style, (5) are reasonably free from defects, (6) possess a reasonably good character, and (7) score not less than 80 points when scored in accordance with the scoring system outlined in this subpart.

(c) "Substandard" is the quality of frozen sweetpotatoes that fail to meet the requirements of U.S. Grade B.

FACTORS OF QUALITY

§ 52.5005 Ascertaining the grade of a sample unit.

(a) *General*. In addition to considering other requirements outlined in the standards, the following quality factors are evaluated in ascertaining the grade of the product:

- (1) *Factors not rated by score points*.
- (i) Varietal characteristics, as applicable.
- (ii) Flavor and odor. A representative

sample of the product is cooked to determine flavor and odor. "Normal flavor and odor" means that the flavor of the product before and after cooking is characteristic of properly prepared sweetpotatoes and is free from objectionable flavors and objectionable odors of any kind.

(2) *Factors rated by score points*. (i) The relative importance of each factor which is scored is expressed numerically on the scale of 100. The maximum number of points that may be given such factors are:

| Factors: | Points |
|--------------------------|--------|
| Color | 20 |
| Uniformity of size | 20 |
| Absence of defects | 40 |
| Character | 20 |
| Total score | 100 |

(ii) Quality factors of color, uniformity of size, and absence of defects are determined by observing the product in the frozen or partially frozen state as soon as the units are separable into individual units, as the case may be, and after the product has been prepared by heating in a suitable manner; the factors of color and character (including consistency, as applicable) and flavor are evaluated after the product has been prepared by heating in a suitable manner as prescribed in this subpart.

§ 52.5006 Color.

(a) *General*. The color of the product (before and after heating) is evaluated on the internal color in whole baked, whole stuffed, and halved stuffed styles and on the overall external color appearance for all other styles. Color variations due to packing media consisting of brown sugar or sweetening mixtures including brown sugar and spices are considered characteristic.

(b) (A) *classification*. Frozen sweetpotatoes that possess a good color may be given a score of 18 to 20 points. "Good color" means a reasonably bright characteristic color (either yellow or golden, but not mixed) and that there may be reasonable variations of such characteristic color among the units, in each unit, or in the mass.

(c) (B) *classification*. If frozen

sweetpotatoes possess a reasonably good color, a score of 16 or 17 points may be given. "Reasonably good color" means that the color (yellow, golden, or mixed) may be variable among the units, in each unit, or in the mass and that the color may be no more than slightly dull. Mixed color types shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a partial limiting rule).

(d) (*SStd*) *classification*. If frozen sweetpotatoes possess an off-color, a score of 0 to 15 points may be given. "Off-color" means that the over-all color is extremely dull, such as, but not limited to the presence of units that are extremely oxidized or the presence of units that are green colored. Frozen sweetpotatoes that score in this classification shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

§ 52.5007 Uniformity of size.

(a) *General*. The factor of uniformity of size for the styles of mashed and mixed frozen sweetpotatoes is not scored; the other three factors (color, absence of defects, and character) are scored and the total multiplied by 100 and divided by 80, dropping any fractions to determine the total score.

(b) *Definition of a "small unit."* A unit that weighs less than $\frac{1}{10}$ ounce is considered a "small unit" when contained in sliced, French-cut, or cut styles.

(c) (*A*) *classification*. Frozen sweetpotatoes that are practically uniform in size may be given a score of 18 to 20 points. "Practically uniform in size" in styles other than mashed or mixed means that:

(1) The frozen sweetpotatoes comply with the size and uniformity requirements for (*A*) classification in Table I of this subpart; and, in addition

(2) The over-all appearance of the product for the applicable style is not materially affected by units of abnormal size and shape.

(d) (*B*) *classification*. If the frozen sweetpotatoes are reasonably uniform in size, a score of 16 or 17 points may be given. "Reasonably uniform in size" in styles other than mashed or mixed means that:

(1) The frozen sweetpotatoes comply with the size and uniformity requirements for (*B*) classification in Table I of this subpart; and, in addition

(2) The over-all appearance of the product for the applicable style is not seriously affected by units of abnormal size and shape.

(e) (*SStd*) *classification*. Frozen sweetpotatoes that fail to meet the requirements of paragraph (d) of this section may be given a score of 0 to 15 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

TABLE I—UNIFORMITY OF SIZE REQUIREMENTS FOR CERTAIN STYLES OF FROZEN SWEETPOTATOES

| Styles, as applicable | (A) Classification | | (B) Classification | |
|--|---|---|---|--|
| | Uniformity of size | | Uniformity of size | |
| Whole: (1) Peeled..... (2) Baked (unpeeled)..... (3) Stuffed..... | } May vary moderately in size..... The weight of the smallest unit is no less than $\frac{2}{3}$ the weight of the largest unit. | | May vary considerably in size. The weight of the smallest unit is no less than $\frac{1}{2}$ the weight of the largest unit. | |
| Halves: (1) Peeled..... (2) Stuffed..... | | | May vary considerably in size. The weight of the smallest unit is no less than $\frac{1}{2}$ the weight of the largest unit. | |
| | | Small units | | Small units |
| Sliced..... French-cut..... Cuts (or ehunks)..... | } May vary moderately in size except that the thickness of slices are reasonably uniform. | Composite weight does not exceed 5% by weight of all units. | } May vary considerably in size except that the thickness of slices are fairly uniform. | Composite weight does not exceed 10% by weight of all units. |
| Diced..... | | | | |

§ 52.5008 Defects.

(a) *General.* The factor of defects refers to the degree of freedom from particles of peel in peeled styles; broken skins and broken or distorted preformed shells in whole baked, whole stuffed, and halves stuffed styles; primary and secondary rootlets, fibrous ends, discolored areas, and corky areas, or from other defects that detract from the appearance or edibility of the unit or product.

(b) (A) *classification.* Frozen sweetpotatoes of any style that are practically free from defects may be given a score of 36 to 40 points. "Practically free from defects" has the following meaning for the applicable styles:

(1) *Whole baked; whole stuffed; halves stuffed.* The peel or shell is not broken nor the shell distorted to any noticeable extent other than in the opening in whole stuffed style; and the units are practically free from primary and secondary rootlets, internal fibers, internal corky areas, and any other defects which do not affect materially the appearance or the edibility of the product.

(2) *Whole peeled; halves peeled; mashed.* The product may contain not more than a slight amount of particles of peel, primary and secondary rootlets, untrimmed fibrous ends, discolored areas, corky areas, and any other defects which

do not affect materially the appearance or the edibility of the product.

(3) *All other styles.* The aggregate weight of all defective units does not exceed 5 percent, by weight, of all the units. One unit in a container is permitted to be defective if such unit exceeds the allowance of 5 percent, by weight: *Provided*, That in all containers comprising the sample such defective units do not exceed 5 percent, by weight, of all the units, and the overall appearance and edibility of the product is not materially affected by the presence of defective units.

(c) (B) *classification.* If the frozen sweetpotatoes of any style are reasonably free from defects, a score of 32 to 35 points may be given. Frozen sweetpotatoes that fall into this classification shall not be graded above U.S. Grade B, regardless of the total score for the product (this is a limiting rule). "Reasonably free from defects" has the following meaning for the applicable styles:

(1) *Whole baked; whole stuffed; halves stuffed.* The peel or shell may be broken or the shell distorted to some extent other than in the opening in whole stuffed style; and the units are reasonably free from primary and secondary rootlets, internal fibers, internal corky areas, and any other defects

which do not affect seriously the appearance or edibility of the product.

(2) *Whole peeled; halves peeled; mashed.* The product may contain not more than a moderate amount of particles of peel, primary or secondary rootlets, untrimmed fibrous ends, discolored areas, corky areas, and any other defects which do not affect seriously the appearance or edibility of the product.

(3) *All other styles.* The aggregate weight of all defective units does not exceed 10 percent, by weight, of all the units. One unit in a container is permitted to be defective if such unit exceeds the allowance of 10 percent, by weight: *Provided*, That in all containers comprising the sample such defective units do not exceed 10 percent, by weight, of all the units, and the overall appearance and edibility of the product is not seriously affected by the presence of defective units.

(d) *(SStd) classification.* Frozen sweetpotatoes that fail to meet the requirements of paragraph (c) of this section may be given a score of 0 to 31 points and shall not be graded above Substandard, regardless of the total score for the product (this is a limiting rule).

§ 52.5009 Character.

(a) *General.* The factor of character refers to the texture or consistency and condition of the flesh, the degree of freedom from pithy units and tough or coarse fibers, the uniformity of tenderness of the frozen sweetpotatoes after heating in a suitable manner, and the tendency of the frozen sweetpotatoes (except for mashed style) to retain their apparent original conformation and size without disintegration.

(b) *(A) classification.* Frozen sweet-

potatoes that possess a good character may be given a score of 18 to 20 points. "Good character and consistency" has the following meaning for the applicable styles:

(1) *Whole baked.* The flesh is not soggy nor dry and is practically free from tough or coarse internal fibers.

(2) *Whole stuffed; halves stuffed; mashed.* The mass or stuffing possesses a uniformly smooth texture and consistency and is free from lumps and tough or coarse fibers.

(3) *All other styles.* The units possess a uniformly smooth texture, are practically free from tough or coarse fibers, and may be firm to soft but hold their apparent original conformation and size without material disintegration.

(c) *(B) classification.* If the frozen sweetpotatoes possess a reasonably good character, a score of 16 or 17 points may be given. "Reasonably good character and consistency" has the following meaning for the applicable styles:

(1) *Whole baked.* The flesh is not excessively dry and is reasonably free from tough or coarse internal fibers.

(2) *Whole stuffed; halves stuffed; mashed.* The texture and consistency of the mass or stuffing may be coarse and stiff but practically free from lumps, and not more than a few tough or coarse fibers may be present.

(3) *All other styles.* The units possess a reasonably uniform smooth texture, are reasonably free from tough or coarse fibers, and 75 percent, by weight, or more of the units hold their apparent original conformation and size without material disintegration.

(d) *(SStd.) classification.* Frozen sweetpotatoes that fail to meet the requirements of paragraph (c) of this section may be given a score of 0 to 15 points and shall not be graded above

Substandard, regardless of the total score for the product (this is a limiting rule).

EXPLANATION AND METHOD OF ANALYSIS

§ 52.5010 Preparation by heating.

"Prepared by heating in a suitable manner" means by either of the following applicable methods:

(a) *Oven method.* (Applicable to any style.)

(1) Place the product and packing media, if any, in a shallow pan (or use the open carton if suitable for heating) of sufficient size so that the product may be spread to a uniform thickness of not more than 1½ inches; and

(2) Place pan (or open carton) and frozen contents into a properly ventilated oven, preheated to 375 degrees F., and allow to remain 30 minutes or longer until the interior portions of the larger units are thoroughly heated and cooked; or

(b) *Pot method.* (Not applicable to baked and stuffed styles). Place the product while still in the frozen state in a stainless steel cooking utensil and add enough water to cover the product. Bring to a boil, cover, and simmer until the larger units are thoroughly cooked.

LOT INSPECTION AND CERTIFICATION

§ 52.5011 Ascertaining the grade of a lot.

The grade of a lot of frozen sweetpotatoes covered by these standards is determined by the procedures set forth in the Regulations Governing Inspection and Certification of Processed Fruits and Vegetables, Processed Products Thereof, and Certain Other Processed Food Products (7 CFR §§ 52.1 through 52.87).

SCORE SHEET

§ 52.5012 Score sheet for frozen sweetpotatoes.

Size and kind of container.....
 Container mark or identification.....
 Label.....
 Package contents (ounces).....
 Weight of media (ounces)—if contained separately.....
 Style of pack of sweetpotatoes.....
 Count (whole; halves).....
 Type of media (if any).....
 Brix measurement of media (if liquid and contained separately).....
 Color (yellow; golden; mixed).....

| Factors | Score points | |
|-------------------------|--------------|--|
| Color..... | 20 | {(A) 18-20 (B) 16-17 (SStd.) 10-15 |
| Uniformity of size..... | 20 | {(A) 18-20 (B) 16-17 (SStd.) 10-15 |
| Absence of defects..... | 40 | {(A) 36-40 (B) 32-35 (SStd.) 10-31 |
| Character..... | 20 | {(A) 18-20 (B) 16-17 (SStd.) 10-15 |
| Total score..... | 100 | |

Flavor and odor.....
 Grade.....

¹ Limiting rule.

² "Mixed Color" limited to Grade B or lower grade (partial limit limiting rule).

The United States Standards for Grades of Frozen Sweetpotatoes (which is the first issue) contained in this subpart shall become effective 30 days after publication hereof in the FEDERAL REGISTER.

Dated: July 30, 1962.

G. R. GRANGE,
 Deputy Administrator,
 Marketing Services.

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